

US EPA ARCHIVE DOCUMENT

*A Community of Practice (CP)
Approach For Integrating Earth
Observation with Human Health &
Environmental Decision-Making*

Air Quality and Health CP

*User Interface Committee (UIC) Meeting
Washington, DC*

Gary J. Foley, PhD
UIC Co-Chair
August 1, 2007

A Spectrum of User Communities

From observations

Earth observations &
earth system models

Data-to-Information
archiving & services

Scientific Knowledge

Decision support tool
development

Decision making

Assessment of benefits

Earth system scientists
and modelers

Earth system service
providers

Sci Discipline Researchers

Env., Economic & Health
modelers & researchers

Policy Makers, Env.
Managers & PH Officials

Public officials, advocacy
groups and the Public

To societal benefits



RESEARCH & DEVELOPMENT

Building a scientific foundation for sound environmental decisions

Communities of Practice (CP)

A user-led community of stakeholders,

- **from providers**
- **to the final beneficiaries of Earth observation data and information,**

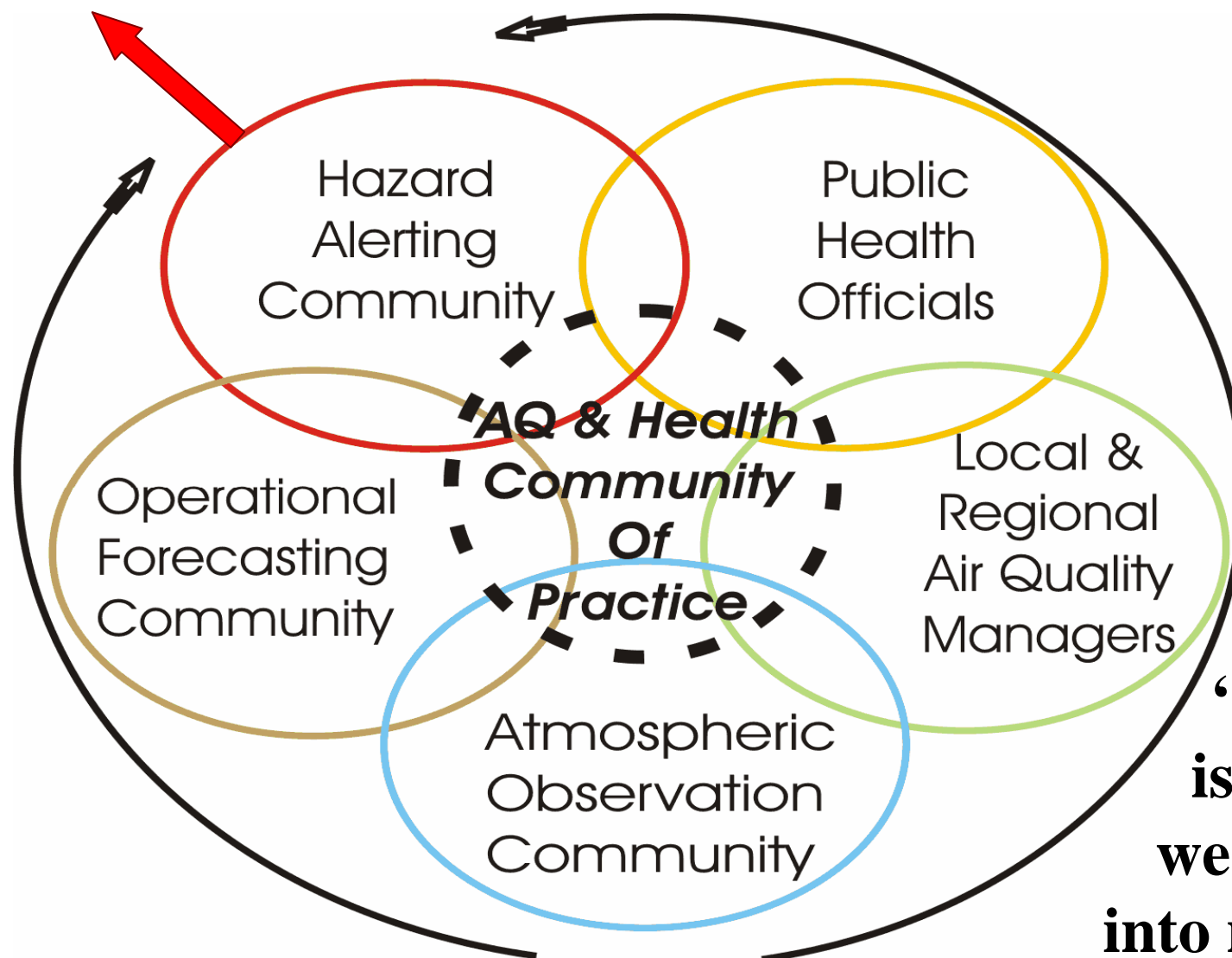
with a common interest in specific aspects of societal benefits to be realized by GEOSS implementation.

The Communities of Practice will be self organized, reporting progress to UIC/GEO



An Example Community of Practice: Air Quality & Health

The Public



**“The world
is intuitively
weaving itself
into networks.”**

Hazard Alerting Community

Public Health Officials

Local & Regional Air Quality Managers

Operational Forecasting Community

Atmospheric Observation Community

December 1, 2005 12:00 am EST



Quality of Air Means Quality of Life

Home

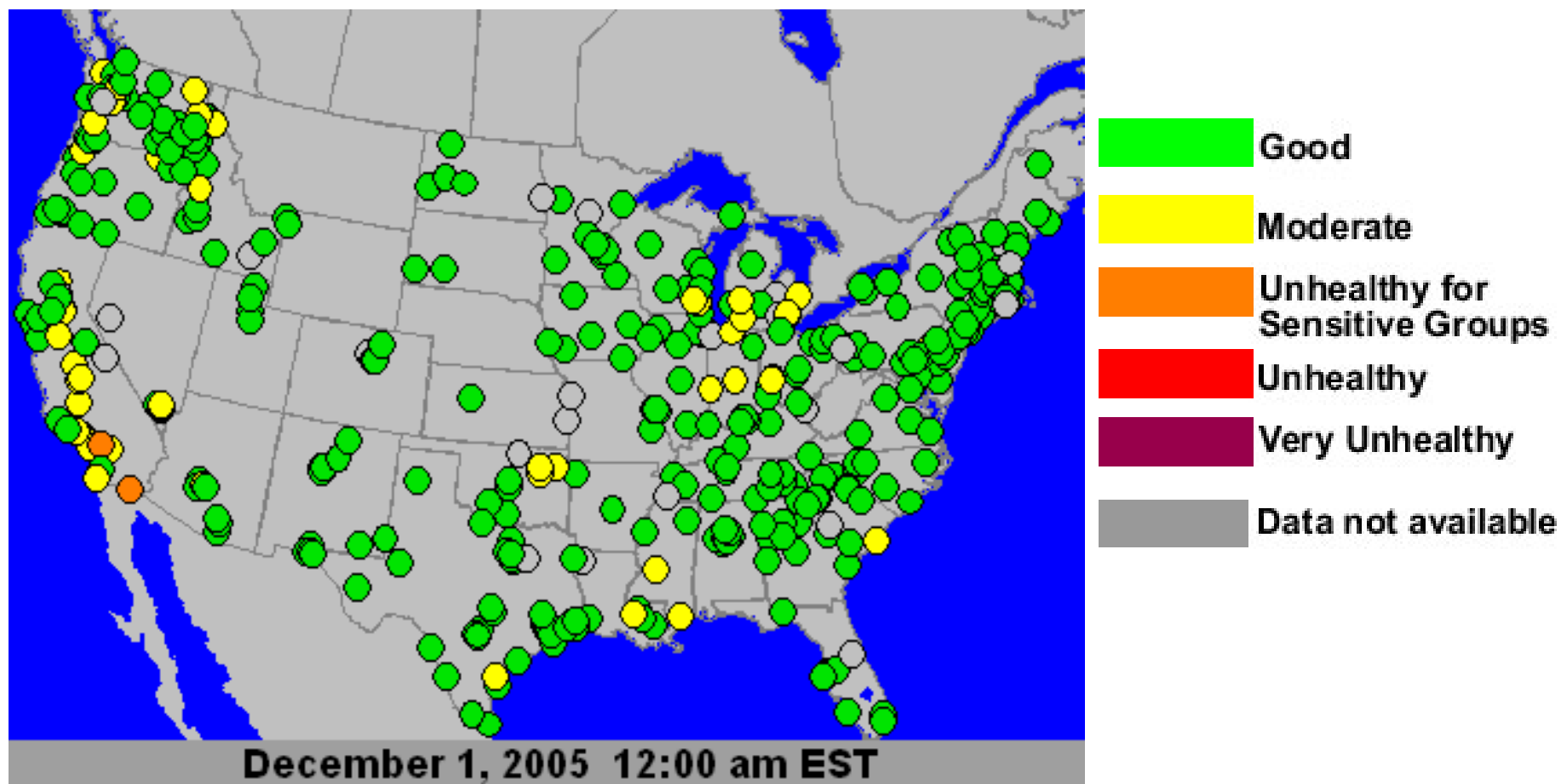
National Forecast

Local Forecasts & Conditions

Partners



Current AQI – Particle Pollution(PM_{2.5})



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Quality of Air Means Quality of Life

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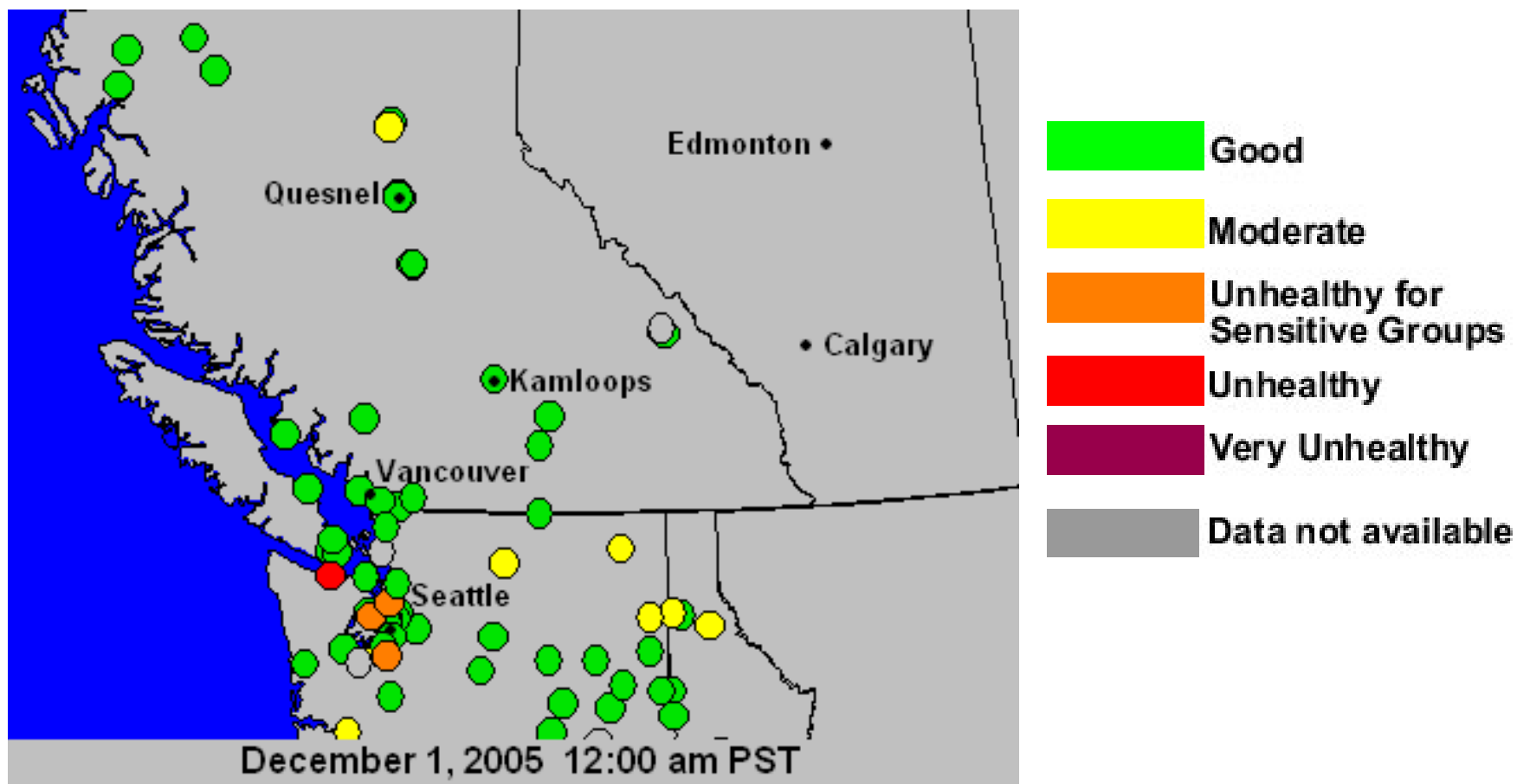
National Forecast

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Current AQI - Particle Pollution(PM2.5)

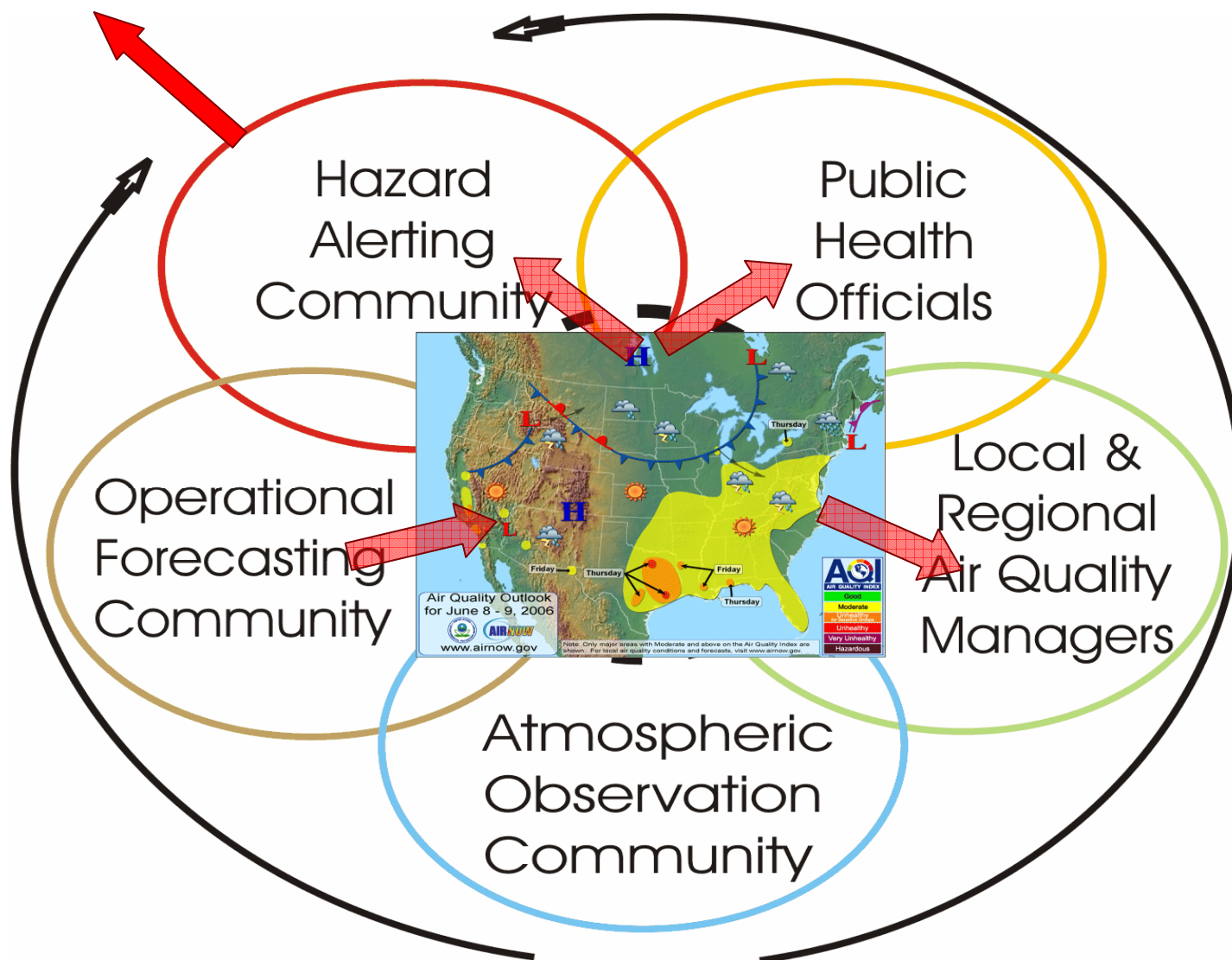


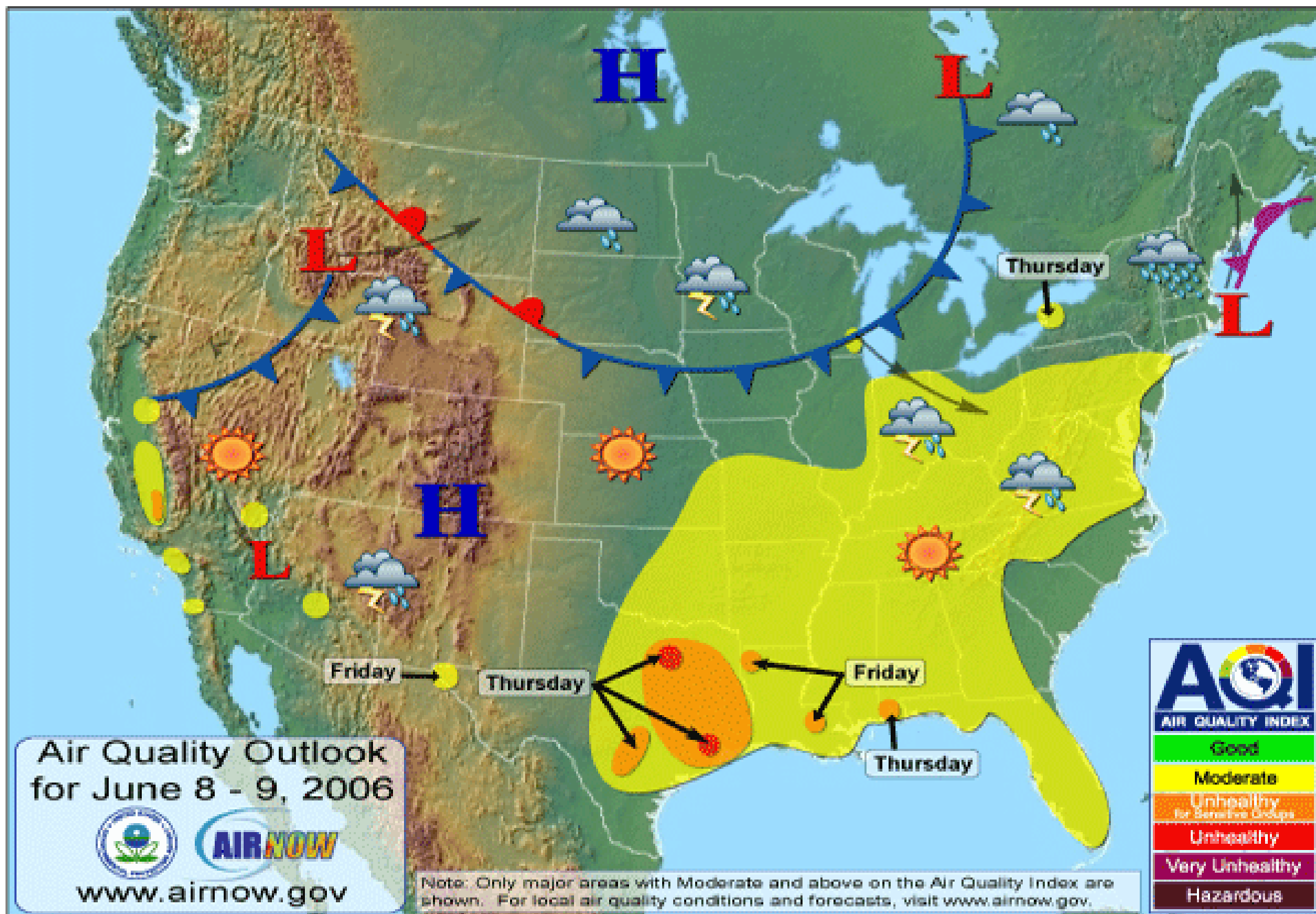
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Real-time AQ Forecasting

The Public

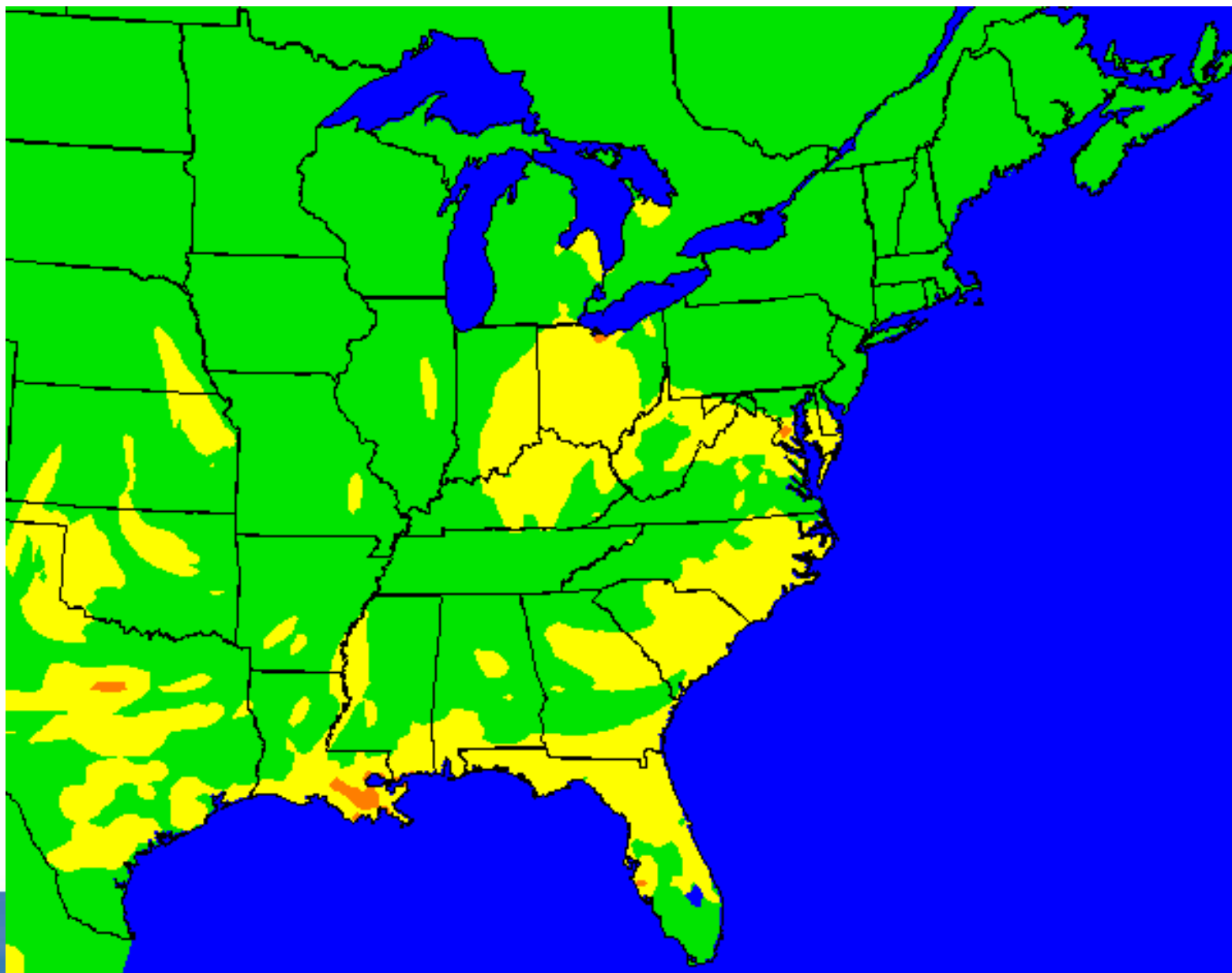


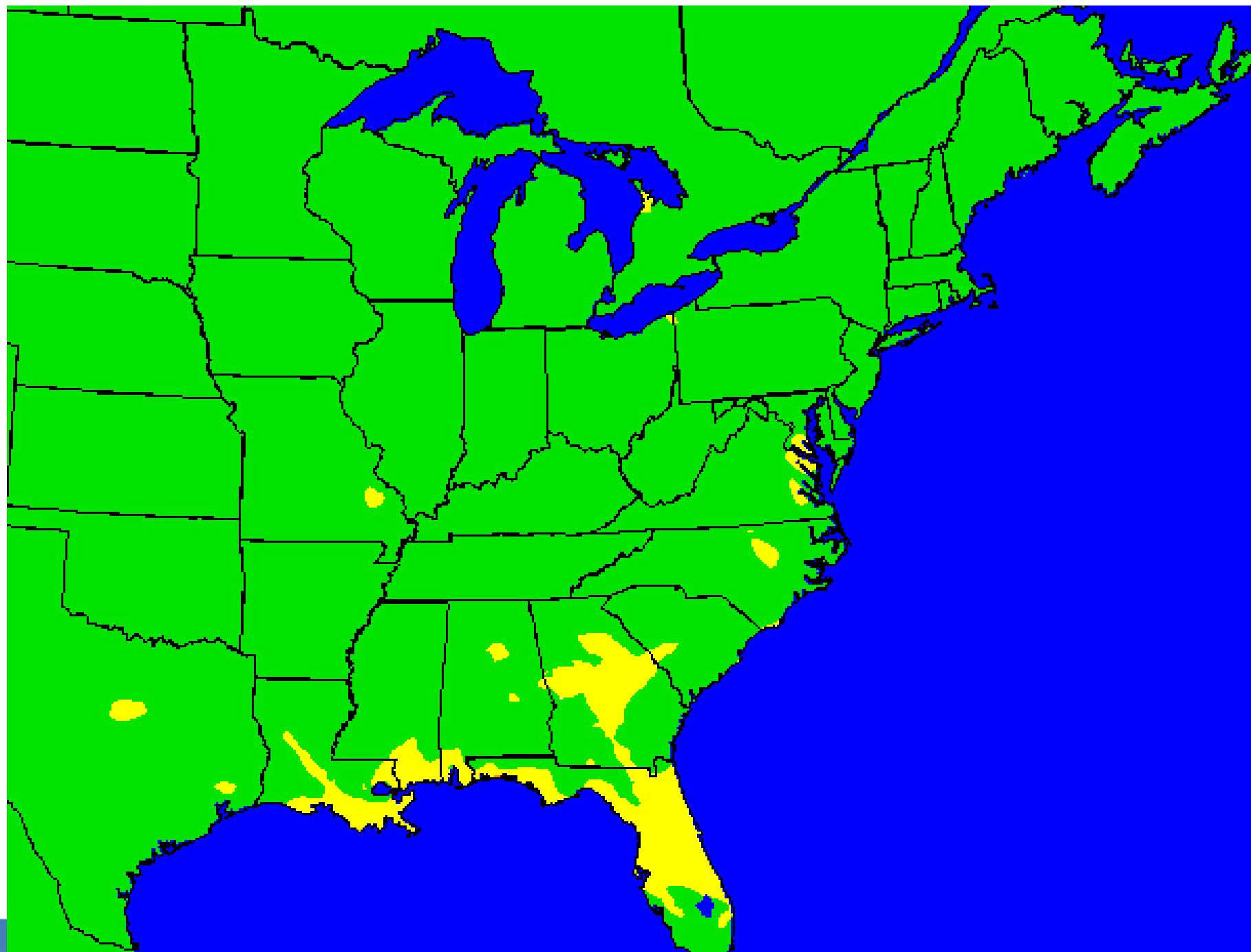


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June 9th Peak Ozone Forecast

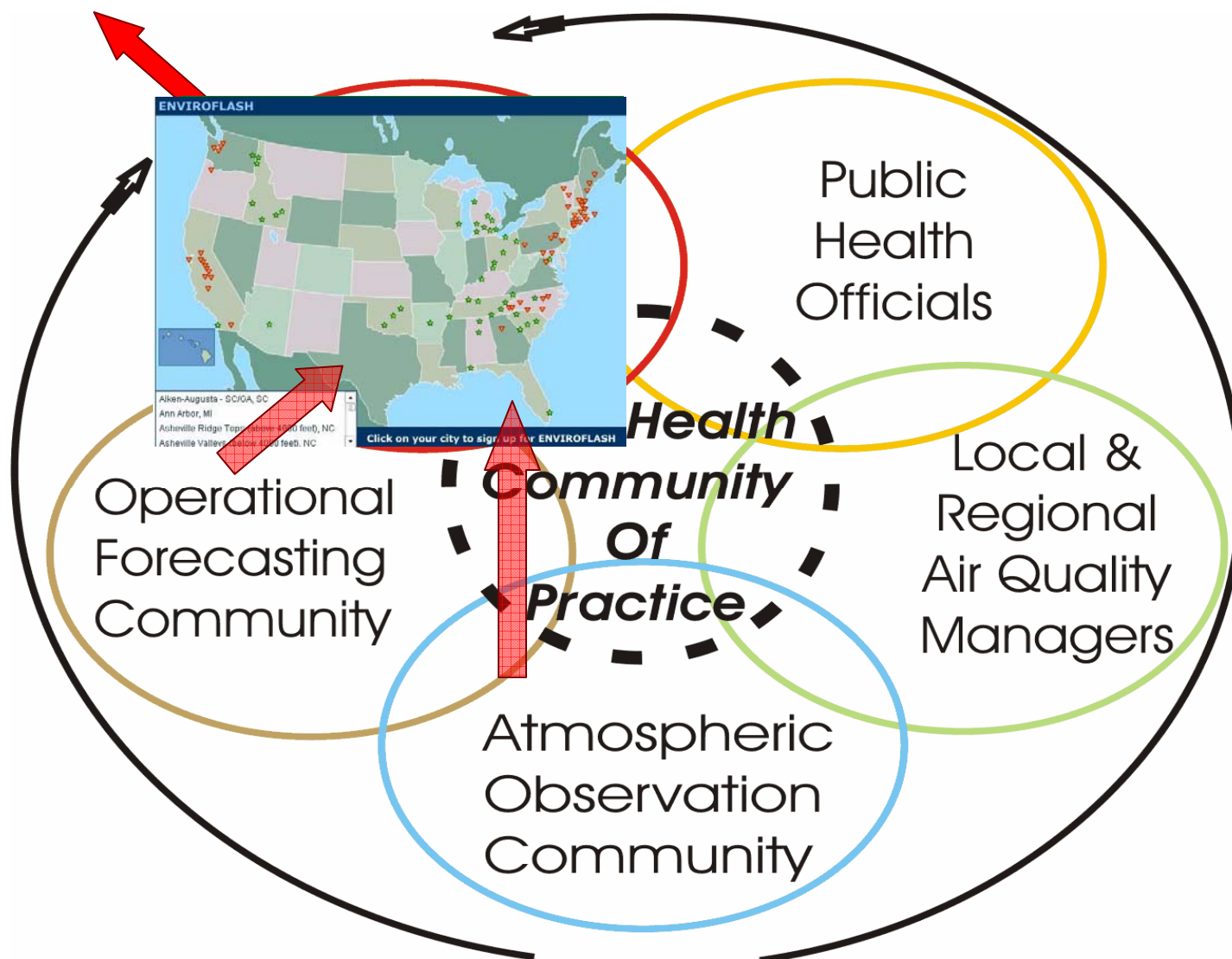




1:00 pm EDT June 7, 2006

Real Time Alerting of the Public

The Public

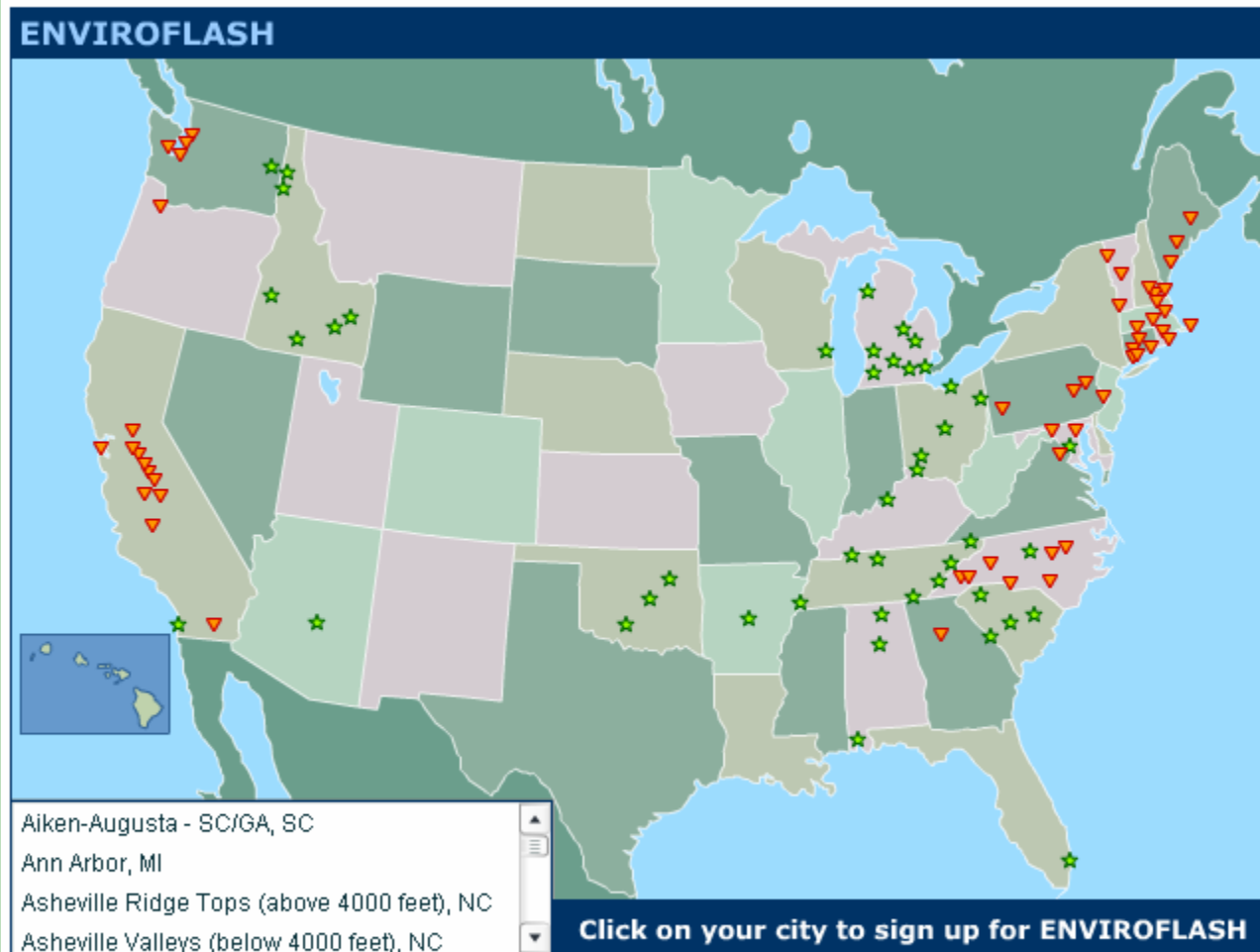


[\(View Non-Flash Version of This Map\)](#)

Topics:
[Your Health](#)
[Smoke from Fires](#)

sources
[Publications](#)
[Publicaciones](#)
[FAQ](#)
[What You Can Do](#)
[About the Data](#)

[Contact Us](#)



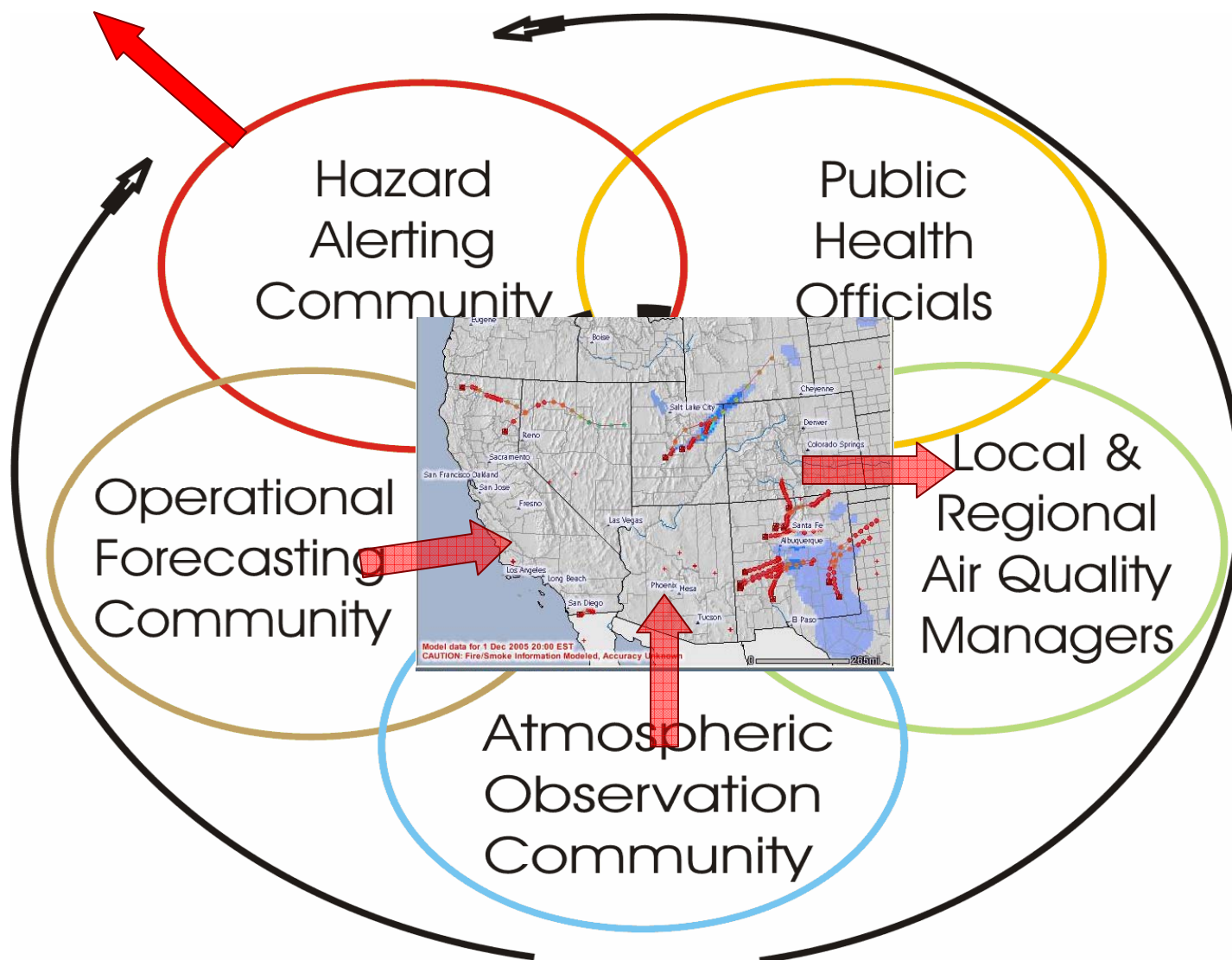
★ Cities with **EnviroFlash**

▼ Cities with other Air Quality E-mail Notification systems

Click a city on the map above. For EnviroFlash cities, an on-line subscription page allows users to sign up, edit the reported information, or cancel the service. Once you choose the type and frequency of service that you

Real Time Modeling of Smoke Plumes

The Public



Display Data For:

Dec 1 8 pm

2005 EST

HR -HR Refresh Map +HR +3HR

☐ Auto Refresh

Data Layers

[Data Status](#)☒ 12km Predictions☒ Wildfire Locations☒ Trajectories☒ Burn Trj Hourly Pts 12km☒ Burn Trj Lines 12km☐ Default Trj Hourly Pts☐ Default Trj Lines☒ Smoke/Weather Layers☐ Surface Winds☐ 36km Predictions☒ NOAA Fire/Smoke Informati☐ Other Pollution Sources☐ Observed Air Quality☐ Receptors☒ Base Map Data

Bluesky Animations

Bluesky Pacific NW

NOAA Animations

Layer Help

A closed group, click to open.

An open group, click to close.

A hidden group/layer, click to make

Model data for 1 Dec 2005 20:00 EST
CAUTION: Fire/Smoke Information Modeled, Accuracy Unknown



Map Legend

Wildfire Locations

- ▲ 0 - 100 Acres
- ▲ 100 - 1000 Acres
- ▲ > 1000 Acres

Burn Trj Hourly Pts 12km

Hours From Start

0 2 4 6 8 10 12

Meters Above Surface

- < 100
- 100 - 250
- 250 - 500
- 500 - 750
- 750 - 1000
- 1000 - 1500
- 1500 - 2000
- > 2000

Burn Trj Lines 12km



Predicted Surface PM2.5

12km

1 5 10 20 40 60 >65
Low Mod High

NOAA Fire Detects



Zoom/Back

Pan/Move

Select/Show/Clear Data

Print/Download/Bookmark

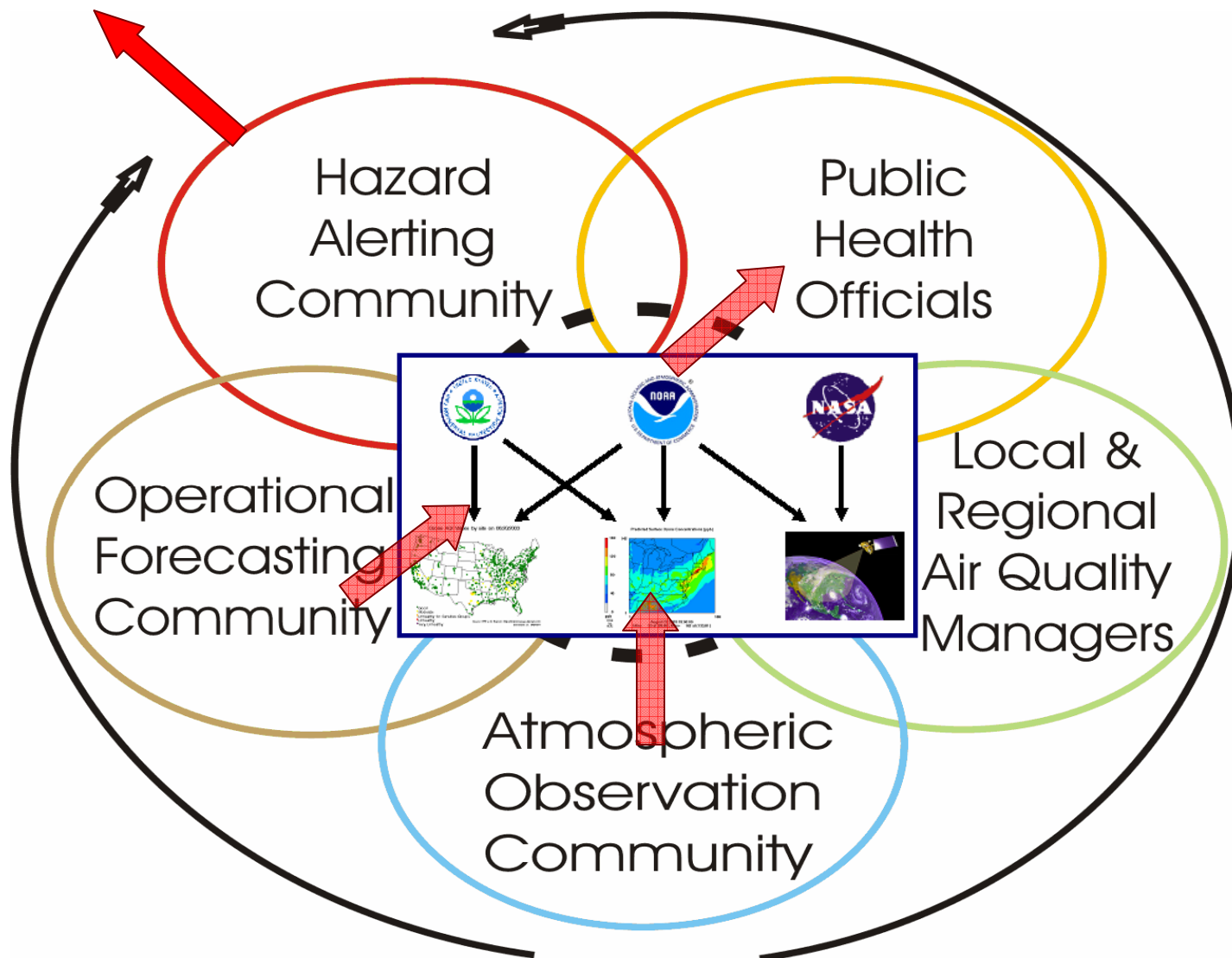
or help

ayouts

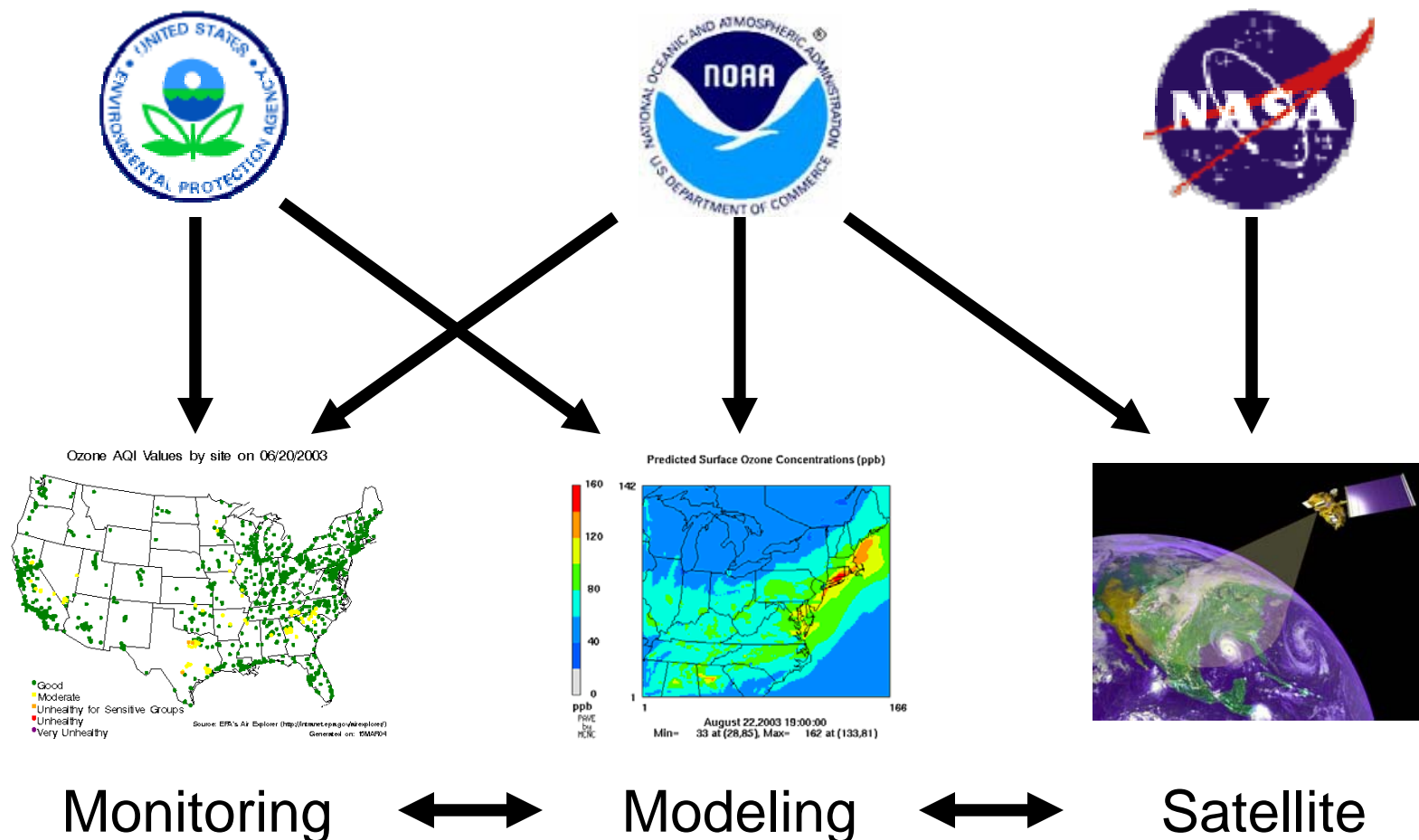
new slides

Better Air Quality Information for Public Health Tracking

The Public



Partnerships in Better Characterizing Air Quality



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The Public Health Air Surveillance Evaluation (PHASE) Project



- Develop and evaluate alternative air quality characterization methods for environmental public health tracking
 - Air Pollutants
 - Ozone and Particulate Matter
 - Health Endpoints
 - Asthma and Cardio Vascular Disease
- Working with 3 CDC State Partners
 - Maine
 - New York
 - Wisconsin



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The Public

